2010
VAPOR RECOVERY COMPLIANCE CALENDAR FOR GASOLINE DISPENSING FACILITIES

California Environmental Protection Agency
AIR RESOURCES BOARD

California Air Resources Board
Enforcement Division/Compliance Assistance Program
PO Box 2815, Sacramento, CA 95812
Telephone: 916.327.7211 or Toll-Free: 800.952.5588
Online: www.arb.ca.gov/cap/cap.htm

INTRODUCTION

The State of California, Air Resources Board (ARB) developed this calendar for use by California gasoline dispensing facilities to help clarify rules and assist in compliance with vapor recovery requirements. This calendar provides general vapor recovery information and tools. Specific vapor recovery rules, regulations, and permitting and inspection requirements are handled by your local Air District.

The Compliance Assistance Program (CAP) provides industry with information and tools, in the form of self-help publications, which clarify requirements and explain how to stay in compliance with air pollution rules and regulations. CAP also assists industry in establishing compliance inspection programs. By conducting routine compliance inspections, facilities can stay in compliance on a daily basis and can thereby avoid costly air pollution violations.

To view all publications available by CAP, please visit www.arb.ca.gov/cap/cap/htm. If you would like to order more publications, please contact (916) 327-7211, or email cap_pubs@arb.ca.gov.

This manual is a dynamic reference document. To ensure that this manual is accurate and current, CAP staff relies on district inspectors' experience and industry personnel's expertise. We invite you to forward any comments, suggestions, and questions to cap_pubs@arb.ca.gov; fax to: (916) 323-3303, or mail to:

Air Resources Board
Enforcement Division
Compliance Assistance Program
P.O. Box 2815
Sacramento, CA 95812

WHAT IS GASOLINE VAPOR RECOVERY?

Gasoline vapor recovery is a system that controls vapors created during the storage and transfer of gasoline in the marketing and distribution process. Liquid gasoline tends to evaporate. A vapor recovery system captures unhealthy gasoline vapor before it is released into the atmosphere.

WHY do we need Vapor Recovery Systems?

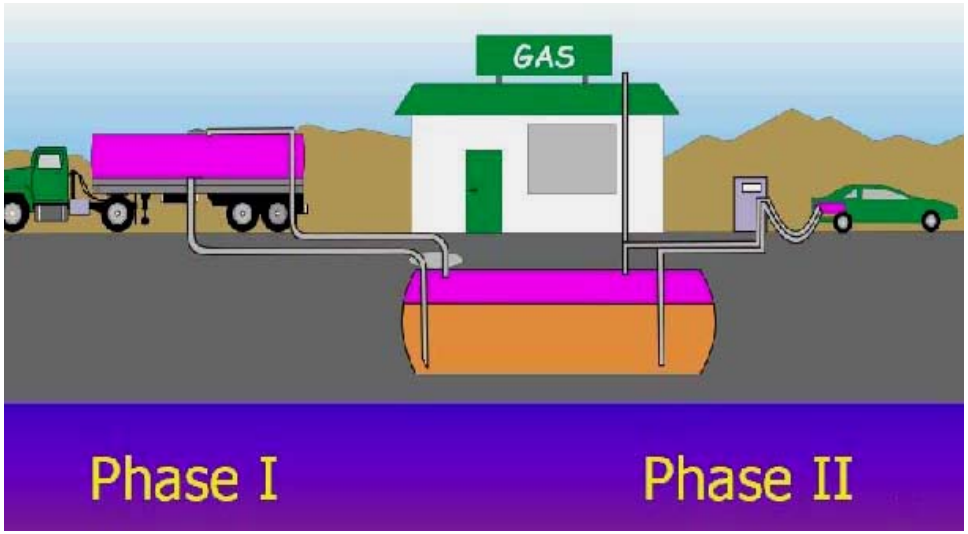
Gasoline vapor emitted into the atmosphere is a concern because it contains volatile organic compounds (VOCs) and hazardous air pollutants such as benzene. These VOCs, along with oxides of nitrogen, NO_x (emitted from the combustion of fuels), react in the atmosphere in the presence of sunlight to form ground-level ozone, known as smog. Smog burns our eyes, damages our lungs, makes breathing difficult, and destroys crops.

HOW does a Vapor Recovery System Capture Gasoline Vapors?

Certified vapor recovery systems include hoses, nozzles, processors, and other equipment that creates a closed system which returns gasoline vapor back to the underground storage tank and then back to the truck that delivers the gasoline to your station. The system and equipment is designed to capture vapor before it is released into the atmosphere. There are two aspects of gasoline vapor recovery, called **Phase I** and **Phase II**:

Phase I - Phase I Vapor Recovery involves the transfer of vapor from the storage tank into the unloading tanker truck where it can be transported back to the terminal vapor processor for recovery or destruction.

Phase II - Phase II Vapor Recovery captures gasoline vapor that would otherwise escape into the environment when motorists refuel their vehicles. Using special dispensing nozzles fitted with vapor return lines, vapor transfers from the fill pipes of refueling vehicles to the stationary storage tank. Vapor displaced during refueling replaces the volume space created by the dispensed fuel from the underground storage tank.

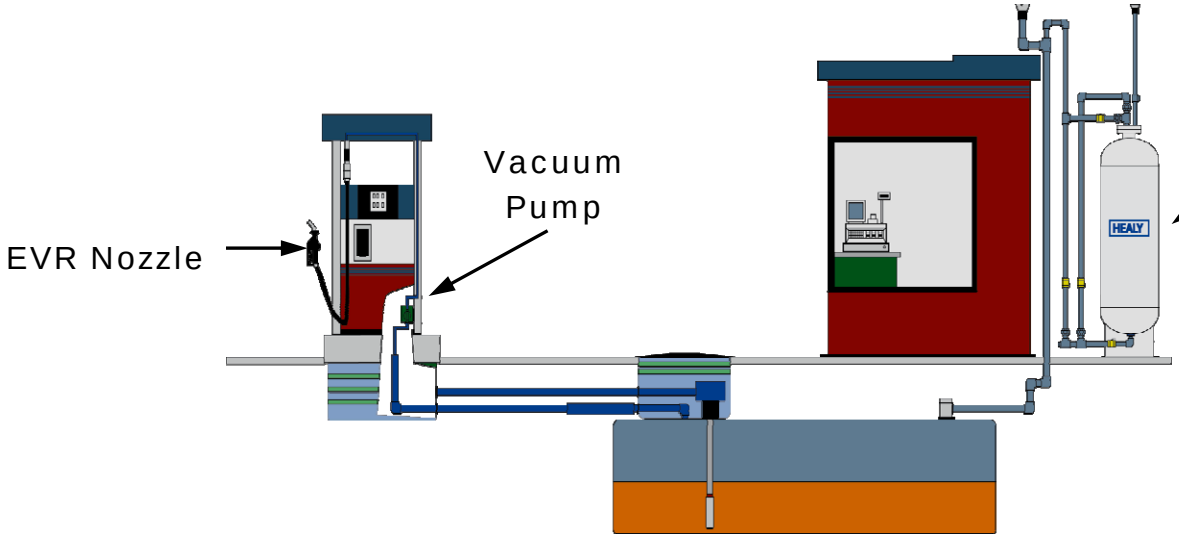


WHAT'S NEW WITH GASOLINE VAPOR RECOVERY?

ENHANCED VAPOR RECOVERY (EVR) PHASE II COMPLIANCE DEADLINE:

APRIL 1, 2009

EVR requires additional Phase II Equipment, including a Vacuum Pump, Pressure Monitor (1 per station), Vapor Monitor (1 per pump), Clean Air Separator (CAS) or Membrane Processor or Hirt Thermal Oxidizer, and EVR Nozzles.



Follow these steps in order to meet the Phase II compliance deadline:

1. Evaluate your station situation using EVR Phase II Executive Orders http://www.arb.ca.gov/vapor/eo-evrphaseII.htm, and Advisories http://www.arb.ca.gov/vapor/advisories/advisories.htm

2. Contact your local air district for EVR compliance requirements: http://www.arb.ca.gov/vapor/distcontjul08.pdf.

3. Conduct site analysis. Look at what you have, what you need, and determine the EVR upgrade that is right for you. You may wish to consult a certified contractor.

4. Get the following local and district permits approved: City and County Planning and Building, Fire, CUPAs, Air District.

5. Information on Underground Storage Tanks (UST) is at: http://www.waterboards.ca.gov/water_issues/programs/ust.

For more Information go to: www.arb.ca.gov/vapor/vapor.htm, www.evrhome.org, and contact your local air district:

Amador County APCD	(209) 257-0112	www.amadorapcd.org
Antelope Valley AQMD	(661) 723-8070	www.avaqmd.ca.gov
Bay Area AQMD	(415) 749-4999	www.baaqmd.gov
Butte County AQMD	(530) 891-2882	www.bcaqmd.org
Calaveras County APCD	(209) 754-6504	
Colusa County APCD	(530) 458-0590	www.colusanet.com/apcd
El Dorado County AQMD	(530) 621-6662	www.co.el-dorado.ca.us/emd/apcd/index.html
Feather River AQMD	(530) 634-7659	www.fraqmd.org
Glenn County APCD	(530) 934-6500	www.countyofglenn.net
Great Basin Unified APCD	(760) 872-8211	www.gbuapcd.org
Imperial County APCD	(760) 482-4606	www.imperialcounty.net
Kern County APCD	(661) 862-5250	www.kernair.org
Lake County AQMD	(707) 263-7000	www.lcaqmd.net
Lassen County APCD	(530) 251-8110	
Mariposa County APCD	(209) 966-2220	
Mendocino County AQMD	(707) 463-4354	www.co.mendocino.ca.us/aqmd/index.htm
Modoc County APCD	(530) 233-5522	
Mojave Desert AQMD	(760) 245-1661	www.mdaqmd.ca.gov/
Monterey Bay Unified APCD	(831) 647-9411	www.mbuapcd.org
North Coast Unified AQMD	(707) 443-3093	www.ncuaqmd.org
Northern Sierra AQMD	(530) 274-9360	www.myairdistrict.com
Northern Sonoma County APCD	(707) 433-5911	
Placer County APCD	(530) 745-2330	www.placer.ca.gov/apcd
Sacramento Metro AQMD	(916) 874-4800	www.airquality.org
San Diego County APCD	(858) 586-2600	www.sdapcd.org/index.html
San Joaquin Valley APCD	(559) 230-6000	www.valleyair.org
San Luis Obispo County APCD	(805) 781-5912	www.slocleanair.org
Santa Barbara County APCD	(805) 961-8800	www.sbcapcd.org
Shasta County AQMD	(530) 225-5674	www.co.shasta.ca.us
Siskiyou County APCD	(530) 841-4029	
South Coast AQMD	(909) 396-2000	www.aqmd.gov
Tehama County APCD	(530) 527-3717	www.tehcoapcd.net
Tuolumne County APCD	(209) 533-5693	
Ventura County APCD	(805) 645-1400	www.vcapcd.org
Yolo-Solano AQMD	(530) 757-3650	www.ysaqmd.org

Your local air district has the responsibility to remove defective equipment from service and assess penalties if a vapor recovery defect is found.

- **Examples of defects include:**
  - **absence, improper installation, or disconnection of any component required to be used in the E.O.(s) that certified the system**
  - **installation or use of any uncertified component**
  - **gasoline dispensing rate < 6.0 gal/min or > 10.0 gal/min**
  - **Phase I vapor poppet inoperative**
  - **nozzle automatic liquid shutoff mechanisms which malfunction in any manner**

- **A current list of Vapor Recovery Defects can be found at: http://www.arb.ca.gov/vapor/vred/vred.htm**

- **The authority for tagging-out vapor recovery defects is stated below:**

  " Defects substantially impairing the effectiveness of vapor recovery systems used in motor vehicle fueling operations." California Code of Regulations, Section 94006, Subchapter 8, Chapter 1, Part III of Title 17.

  " The defects shall be identified and listed for each certified system and shall be specified in the applicable certification documents for each system." California Health & Safety Code, Division 26, Part 4, Section 41960.2, Section (c)(1).

  " out of order" – "No person shall use or permit the use of the component until the component has been repaired, replaced or adjusted and the district has authorized it's use." California Health & Safety Code, Division 26, Part 4, Section 41960.2, Section (d).

PERFORMING YOUR DAILY INSPECTION

Determine the Air Resources Board Executive Order from your permit to operate, the hardware or the ID plate on the dispenser. Check: http://www.arb.ca.gov/vapor/eo.htm. Is the equipment certified in the Executive Order, such as the hose assembly, nozzle and breakaway? Is your Gasoline Dispensing System a BALANCE or VACUUM ASSIST EVR System? Read your Permit to Operate issued by your local air district. Follow the appropriate inspection steps for your system…

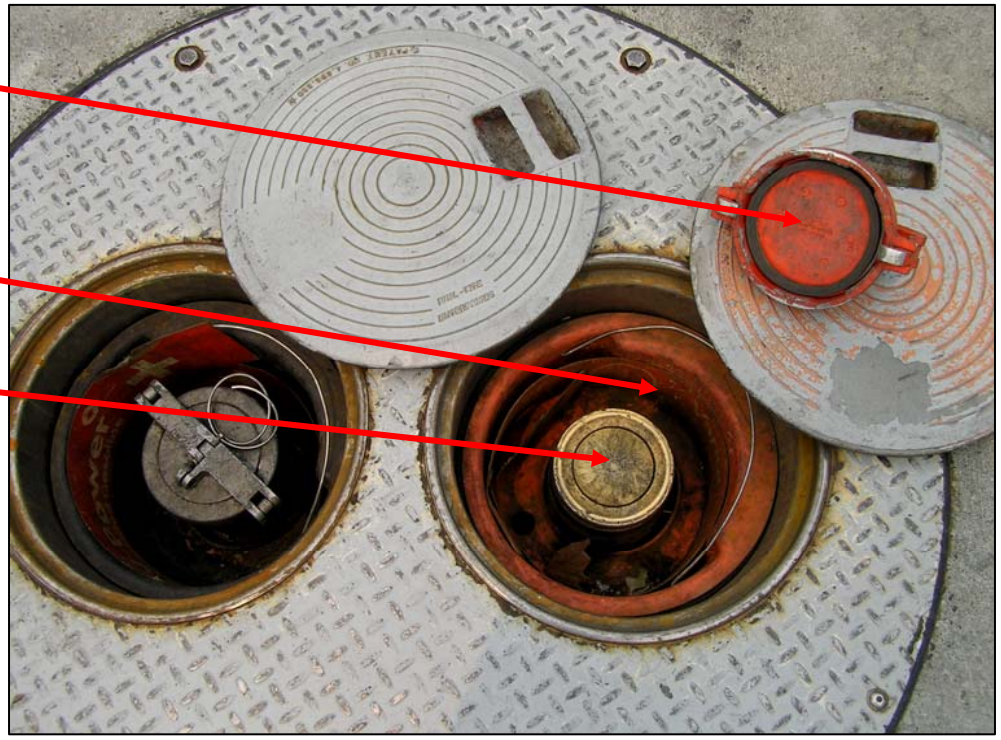
PHASE I - involves the transfer of vapor from the storage tank into the unloading tanker truck where it can be transported back to the terminal vapor processor for recovery or destruction.

Dust Cap - Seal in place and in good condition? Seated at least 4 inches down from grade? Cap color is red on vapor side, and grey on fill side.

Spill Containment Bucket - Free of all liquid and debris? Do the drain valves open and close while pulling on the chain?

Dry Break - Does the spring movement open and then return to closed position?

Vapor Return Swivel Adaptor- Adapter not damaged or loose.



PHASE II INSPECTION

Phase II Vapor Recovery captures gasoline vapor that would otherwise escape when motorists refuel their vehicles.

Nozzle features will allow you to determine whether you have a balance or an assist vapor recovery system installed at your station.

EVR SYSTEMS – DAILY EQUIPMENT INSPECTION

EVR BALANCE SYSTEM NOZZLE
Short bellows, wide faceplate

(Vapor collection holes; Liquid shut-off)
EVR ASSIST SYSTEM NOZZLE
Short bellows, wide cone.
Vapor collection holes in spout.

1. Extend the hose and drain vapor path into graduated cylinder.

2. Measure any liquid that drains from hose. Total liquid of 100 ml or more is a defect.

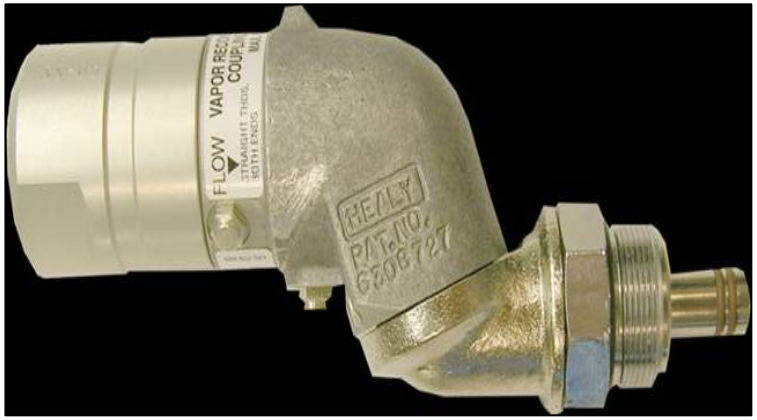
3. Check bellows for holes or triangular tears. Check for missing or damaged faceplates.

4. Check for liquid leaks, latching device, trigger feel, check flow rate with stop watch (6-10 gallons per minute).

EVR SYSTEMS – DAILY EQUIPMENT INSPECTION

5. Break-away - Check to make sure that the flow is faced in the correct direction.

6. Check that hose length does not drag past the island. Check retractor operation.



7. Check for proper operation of swivels.

8. Make sure to reattach the breakaway and hanging hardware after a drive-off. Your local district may require additional testing to confirm proper connection.

EVR VAPOR RECOVERY PHASE II EQUIPMENT INSPECTION CHECKLIST

1. ***Check for liquid leaks, latching device, trigger feel, and check flow rate with stopwatch (must be between 6 to 10 Gallons per minute).***

2. ***Check bellows for holes or triangular tears. Check for missing or damaged faceplates.***

3. ***Check that the spout is tight, secure and not loose.***

4. ***Check for proper operation of swivels.***

5. ***Break-away - Check to make sure that the flow is pointing in the correct direction.***

6. ***Check hose length. Check retractor operation.***

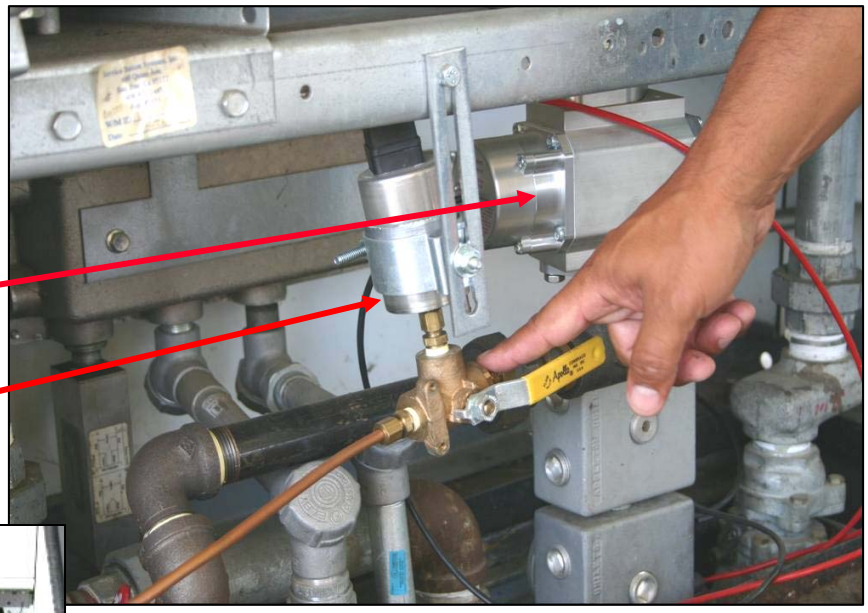
7. ***Check to see that the ISD is working properly, and any alarm events have been repaired and cleared by a certified technician.***

EVR IN-STATION DIAGNOSTICS (ISD) COMPONENT INSPECTION:

The ISD system has 2 components that interface between the dispenser and the monitoring console.

Vapor flow meter (1 per dispenser)

System pressure sensor (1 per station)



Listen for the vapor pump motor when dispenser is in use. Use the guidelines in the Executive Order under the systems' scheduled maintenance for cross checking.

ISD MONITORING SYSTEMS

Produces daily and monthly reports

Communicates with the Flow Meter and Pressure Sensor. Monitors EVR parameters.

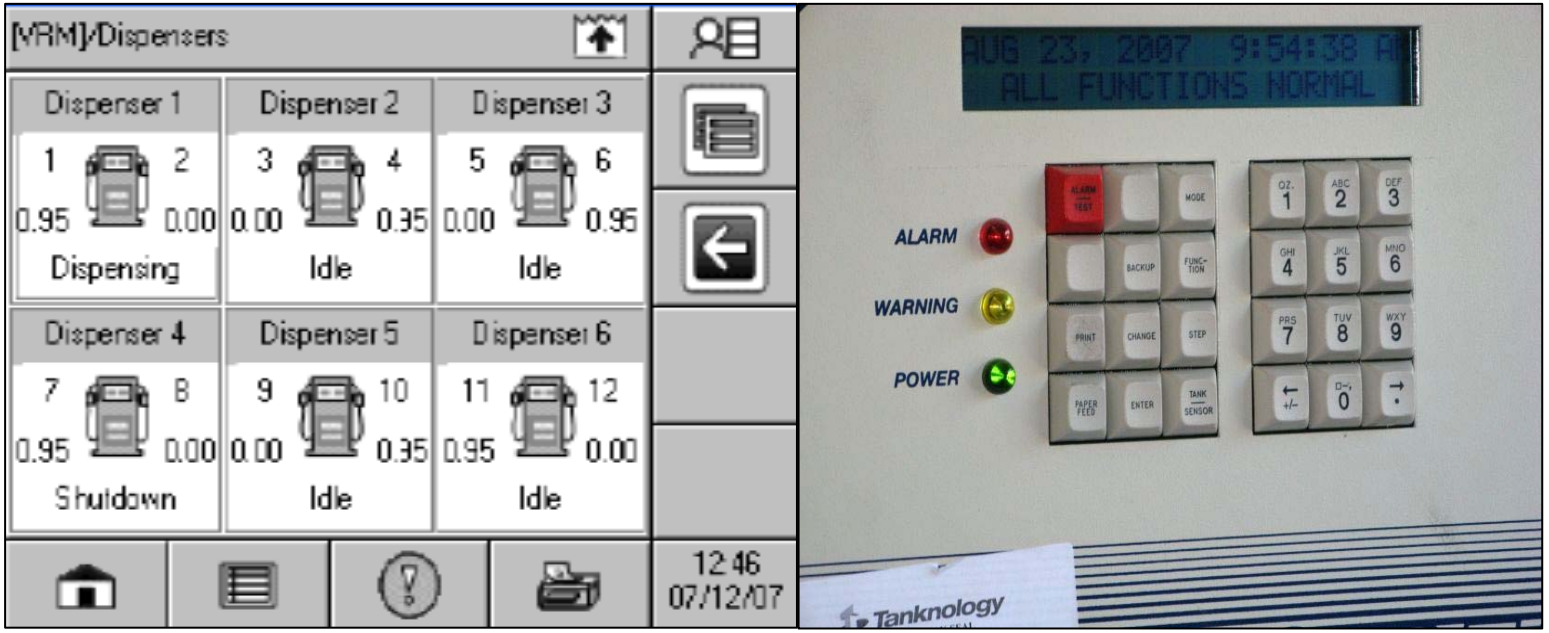
ISD ALARM PROCEDURE

The ISD SYSTEM will make an alarm assessment once every 24 hours, usually at midnight. An ISD failure will shut down the system.

Follow your local air district permit conditions when clearing an alarm event.

Dispenser can be re-enabled only by an authorized person with password access, if local regulations allow.

ISD MONITORS



CALL A CERTIFIED TECHNICIAN TO REPAIR AND CLEAR THE SYSTEM AFTER AN ALARM EVENT

Your local air district may require technicians to provide documents for all work performed. Also, you may be required to keep proper records.

ISD installation is required by September 2009, for those stations with more than 1.8 million gallon throughput and by September 2010 for those stations with more than 600,000 gallon throughput.

EVR EQUIPMENT INSTALLATION REQUIRES SERVICE CONTRACTOR CERTIFICATION

- **Installation and Service Contractors will initially be trained in a classroom setting.**
- **Certification will expire 1 or 2 years from the date of completion.**
- **Some re-certification can be completed online.**
- **Lists of authorized installation/service contractors are posted on the web site: http://www.evrhome.org/contractors.htm**
- **Contractors will receive a wallet size certification card indicating:**

  - **Certification Type**
  - **Date of Training**
  - **Expiration Date**

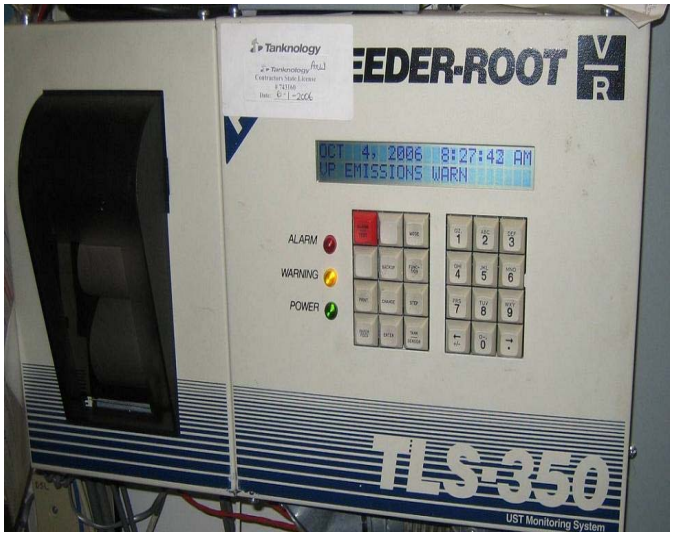
EXAMPLE OF ISD CERTIFICATION

Your local district may require that all technicians and installers be International Code Council (ICC) certified for vapor recovery.

June 2010

INSPECTION POINTS

PHASE I - Underground Storage Tanks (UST)
Spill containment buckets clean and dry
Caps locked on, with gaskets in place
Fill tube/adapter not damaged or loose
Pressure vacuum vent installed, not damaged
Poppet is not broken and forms a seal
PHASE II - Gasoline Dispensing Equipment
Missing or disconnected, or uncertified component installed
Hose proper length
Bellows/faceplate: No tears or rips, not loose from nozzle
No kinks, flat spots, tears, or cuts
Nozzle auto shutoff working properly
No leaks, latch and trigger working
Break away connected properly
Vapor processing unit working
ISD working properly



Veeder-Root TLS - 350

MONTHLY MAINTENANCE RECORDS

Date of Maintenance/ Test/ Inspection/ Failure	Pump Number	Date Repaired	Manufacturer/ Part Used to Repair	Name/ Certified Technician ID # of Individual Conducting Maintenance

June 2010

Sun	Mon	Tues	Wed	Thu	Fri	Sat
		1 ☐ Daily Inspection	2 ☐ Daily Inspection	3 ☐ Daily Inspection	4 ☐ Daily Inspection	5 ☐ Daily Inspection
6 ☐ Daily Inspection	7 ☐ Daily Inspection	8 ☐ Daily Inspection	9 ☐ Daily Inspection	10 ☐ Daily Inspection	11 ☐ Daily Inspection	12 ☐ Daily Inspection
13 ☐ Daily Inspection	14 ☐ Daily Inspection	15 ☐ Daily Inspection	16 ☐ Daily Inspection	17 ☐ Daily Inspection	18 ☐ Daily Inspection	19 ☐ Daily Inspection
20 ☐ Daily Inspection	21 ☐ Daily Inspection	22 ☐ Daily Inspection	23 ☐ Daily Inspection	24 ☐ Daily Inspection	25 ☐ Daily Inspection	26 ☐ Daily Inspection
27 ☐ Daily Inspection	28 ☐ Daily Inspection	29 ☐ Daily Inspection	30 ☐ Monthly Inspection			

July 2010

INSPECTION POINTS

PHASE I - Underground Storage Tanks (UST)
Spill containment buckets clean and dry
Caps locked on, with gaskets in place
Fill tube/adapter not damaged or loose
Pressure vacuum vent installed, not damaged
Poppet is not broken and forms a seal
PHASE II - Gasoline Dispensing Equipment
Missing or disconnected, or uncertified component installed
Hose proper length
Bellows/faceplate: No tears or rips, not loose from nozzle
No kinks, flat spots, tears, or cuts
Nozzle auto shutoff working properly
No leaks, latch and trigger working
Break away connected properly
Vapor processing unit working
ISD working properly

Veeder-Root Carbon Polisher

MONTHLY MAINTENANCE RECORDS

Date of Maintenance/ Test/ Inspection/ Failure	Pump Number	Date Repaired	Manufacturer/ Part Used to Repair	Name/ Certified Technician ID # of Individual Conducting Maintenance

JULY 2010

Sun	Mon	Tues	Wed	Thu	Fri	Sat
				1 ☐ Daily Inspection	2 ☐ Daily Inspection	3 ☐ Daily Inspection
4 ☐ Daily Inspection	5 ☐ Daily Inspection	6 ☐ Daily Inspection	7 ☐ Daily Inspection	8 ☐ Daily Inspection	9 ☐ Daily Inspection	10 ☐ Daily Inspection
11 ☐ Daily Inspection	12 ☐ Daily Inspection	13 ☐ Daily Inspection	14 ☐ Daily Inspection	15 ☐ Daily Inspection	16 ☐ Daily Inspection	17 ☐ Daily Inspection
18 ☐ Daily Inspection	19 ☐ Daily Inspection	20 ☐ Daily Inspection	21 ☐ Daily Inspection	22 ☐ Daily Inspection	23 ☐ Daily Inspection	24 ☐ Daily Inspection
25 ☐ Daily Inspection	26 ☐ Daily Inspection	27 ☐ Daily Inspection	28 ☐ Daily Inspection	29 ☐ Daily Inspection	30 ☐ Daily Inspection	31 ☐ Monthly Inspection

AUGUST 2010

INSPECTION POINTS

PHASE I - Underground Storage Tanks (UST)
Spill containment buckets clean and dry
Caps locked on, with gaskets in place
Fill tube/adapter not damaged or loose
Pressure vacuum vent installed, not damaged
Poppet is not broken and forms a seal
PHASE II - Gasoline Dispensing Equipment
Missing or disconnected, or uncertified component installed
Hose proper length
Bellows/faceplate: No tears or rips, not loose from nozzle
No kinks, flat spots, tears, or cuts
Nozzle auto shutoff working properly
No leaks, latch and trigger working
Break away connected properly
Vapor processing unit working
ISD working properly

INSIDE AN EVR DISPENSER

MONTHLY MAINTENANCE RECORDS

Date of Maintenance/ Test/ Inspection/ Failure	Pump Number	Date Repaired	Manufacturer/ Part Used to Repair	Name/ Certified Technician ID # of Individual Conducting Maintenance

AUGUST 2010

Sun	Mon	Tues	Wed	Thu	Fri	Sat
1 ☐ Daily Inspection	2 ☐ Daily Inspection	3 ☐ Daily Inspection	4 ☐ Daily Inspection	5 ☐ Daily Inspection	6 ☐ Daily Inspection	7 ☐ Daily Inspection
8 ☐ Daily Inspection	9 ☐ Daily Inspection	10 ☐ Daily Inspection	11 ☐ Daily Inspection	12 ☐ Daily Inspection	13 ☐ Daily Inspection	14 ☐ Daily Inspection
15 ☐ Daily Inspection	16 ☐ Daily Inspection	17 ☐ Daily Inspection	18 ☐ Daily Inspection	19 ☐ Daily Inspection	20 ☐ Daily Inspection	21 ☐ Daily Inspection
22 ☐ Daily Inspection	23 ☐ Daily Inspection	24 ☐ Daily Inspection	25 ☐ Daily Inspection	26 ☐ Daily Inspection	27 ☐ Daily Inspection	28 ☐ Daily Inspection
29 ☐ Daily Inspection	30 ☐ Daily Inspection	31 ☐ Monthly Inspection				

SEPTEMBER 2010

INSPECTION POINTS

PHASE I - Underground Storage Tanks (UST)
Spill containment buckets clean and dry
Caps locked on, with gaskets in place
Fill tube/adapter not damaged or loose
Pressure vacuum vent installed, not damaged
Poppet is not broken and forms a seal
PHASE II - Gasoline Dispensing Equipment
Missing or disconnected, or uncertified component installed
Hose proper length
Bellows/faceplate: No tears or rips, not loose from nozzle
No kinks, flat spots, tears, or cuts
Nozzle auto shutoff working properly
No leaks, latch and trigger working
Break away connected properly
Vapor processing unit working
ISD working properly

HIRT VCS 100 THERMAL OXIDIZER

MONTHLY MAINTENANCE RECORDS

Date of Maintenance/ Test/ Inspection/ Failure	Pump Number	Date Repaired	Manufacturer/ Part Used to Repair	Name/ Certified Technician ID # of Individual Conducting Maintenance

SEPTEMBER 2010

Sun	Mon	Tues	Wed	Thu	Fri	Sat
			1 ☐ Daily Inspection	2 ☐ Daily Inspection	3 ☐ Daily Inspection	4 ☐ Daily Inspection
5 ☐ Daily Inspection	6 ☐ Daily Inspection	7 ☐ Daily Inspection	8 ☐ Daily Inspection	9 ☐ Daily Inspection	10 ☐ Daily Inspection	11 ☐ Daily Inspection
12 ☐ Daily Inspection	13 ☐ Daily Inspection	14 ☐ Daily Inspection	15 ☐ Daily Inspection	16 ☐ Daily Inspection	17 ☐ Daily Inspection	18 ☐ Daily Inspection
19 ☐ Daily Inspection	20 ☐ Daily Inspection	21 ☐ Daily Inspection	22 ☐ Daily Inspection	23 ☐ Daily Inspection	24 ☐ Daily Inspection	25 ☐ Daily Inspection
26 ☐ Daily Inspection	27 ☐ Daily Inspection	28 ☐ Daily Inspection	29 ☐ Daily Inspection	30 ☐ Monthly Inspection		

OCTOBER 2010

INSPECTION POINTS

PHASE I - Underground Storage Tanks (UST)
Spill containment buckets clean and dry
Caps locked on, with gaskets in place
Fill tube/adapter not damaged or loose
Pressure vacuum vent installed, not damaged
Poppet is not broken and forms a seal
PHASE II - Gasoline Dispensing Equipment
Missing or disconnected, or uncertified component installed
Hose proper length
Bellows/faceplate: No tears or rips, not loose from nozzle
No kinks, flat spots, tears, or cuts
Nozzle auto shutoff working properly
No leaks, latch and trigger working
Break away connected properly
Vapor processing unit working
ISD working properly

EVR HANGING HARDWARE

MONTHLY MAINTENANCE RECORDS

Date of Maintenance/ Test/ Inspection/ Failure	Pump Number	Date Repaired	Manufacturer/ Part Used to Repair	Name/ Certified Technician ID # of Individual Conducting Maintenance

OCTOBER 2010

Sun	Mon	Tues	Wed	Thu	Fri	Sat
					1 ☐ Daily Inspection	2 ☐ Daily Inspection
3 ☐ Daily Inspection	4 ☐ Daily Inspection	5 ☐ Daily Inspection	6 ☐ Daily Inspection	7 ☐ Daily Inspection	8 ☐ Daily Inspection	9 ☐ Daily Inspection
10 ☐ Daily Inspection	11 ☐ Daily Inspection	12 ☐ Daily Inspection	13 ☐ Daily Inspection	14 ☐ Daily Inspection	15 ☐ Daily Inspection	16 ☐ Daily Inspection
17 ☐ Daily Inspection	18 ☐ Daily Inspection	19 ☐ Daily Inspection	20 ☐ Daily Inspection	21 ☐ Daily Inspection	22 ☐ Daily Inspection	23 ☐ Daily Inspection
24 ☐ Daily Inspection	25 ☐ Daily Inspection	26 ☐ Daily Inspection	27 ☐ Daily Inspection	28 ☐ Daily Inspection	29 ☐ Daily Inspection	30 ☐ Daily Inspection
31 ☐ Monthly Inspection						

NOVEMBER 2010

INSPECTION POINTS

PHASE I - Underground Storage Tanks (UST)
Spill containment buckets clean and dry
Caps locked on, with gaskets in place
Fill tube/adapter not damaged or loose
Pressure vacuum vent installed, not damaged
Poppet is not broken and forms a seal
PHASE II - Gasoline Dispensing Equipment
Missing or disconnected, or uncertified component installed
Hose proper length
Bellows/faceplate: No tears or rips, not loose from nozzle
No kinks, flat spots, tears, or cuts
Nozzle auto shutoff working properly
No leaks, latch and trigger working
Break away connected properly
Vapor processing unit working
ISD working properly

ENHANCED VAPOR RECOVERY DISPENSER

MONTHLY MAINTENANCE RECORDS

Date of Maintenance/ Test/ Inspection/ Failure	Pump Number	Date Repaired	Manufacturer/ Part Used to Repair	Name/ Certified Technician ID # of Individual Conducting Maintenance

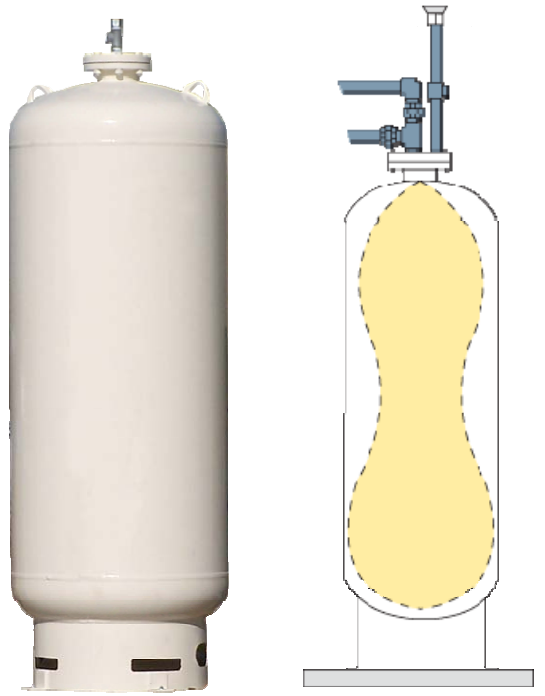
NOVEMBER 2010

Sun	Mon	Tues	Wed	Thu	Fri	Sat
	1 ☐ Daily Inspection	2 ☐ Daily Inspection	3 ☐ Daily Inspection	4 ☐ Daily Inspection	5 ☐ Daily Inspection	6 ☐ Daily Inspection
7 ☐ Daily Inspection	8 ☐ Daily Inspection	9 ☐ Daily Inspection	10 ☐ Daily Inspection	11 ☐ Daily Inspection	12 ☐ Daily Inspection	13 ☐ Daily Inspection
14 ☐ Daily Inspection	15 ☐ Daily Inspection	16 ☐ Daily Inspection	17 ☐ Daily Inspection	18 ☐ Daily Inspection	19 ☐ Daily Inspection	20 ☐ Daily Inspection
21 ☐ Daily Inspection	22 ☐ Daily Inspection	23 ☐ Daily Inspection	24 ☐ Daily Inspection	25 ☐ Daily Inspection	26 ☐ Daily Inspection	27 ☐ Daily Inspection
28 ☐ Daily Inspection	29 ☐ Daily Inspection	30 ☐ Monthly Inspection				

DECEMBER 2010

INSPECTION POINTS

PHASE I - Underground Storage Tanks (UST)
Spill containment buckets clean and dry
Caps locked on, with gaskets in place
Fill tube/adapter not damaged or loose
Pressure vacuum vent installed, not damaged
Poppet is not broken and forms a seal
PHASE II - Gasoline Dispensing Equipment
Missing or disconnected, or uncertified component installed
Hose proper length
Bellows/faceplate: No tears or rips, not loose from nozzle
No kinks, flat spots, tears, or cuts
Nozzle auto shutoff working properly
No leaks, latch and trigger working
Break away connected properly
Vapor processing unit working
ISD working properly



"BLADDER" INSIDE THE CLEAN AIR SEPARATOR (CAS)

MONTHLY MAINTENANCE RECORDS

Date of Maintenance/ Test/ Inspection/ Failure	Pump Number	Date Repaired	Manufacturer/ Part Used to Repair	Name/ Certified Technician ID # of Individual Conducting Maintenance

DECEMBER 2010

Sun	Mon	Tues	Wed	Thu	Fri	Sat
			1 ☐ Daily Inspection	2 ☐ Daily Inspection	3 ☐ Daily Inspection	4 ☐ Daily Inspection
5 ☐ Daily Inspection	6 ☐ Daily Inspection	7 ☐ Daily Inspection	8 ☐ Daily Inspection	9 ☐ Daily Inspection	10 ☐ Daily Inspection	11 ☐ Daily Inspection
12 ☐ Daily Inspection	13 ☐ Daily Inspection	14 ☐ Daily Inspection	15 ☐ Daily Inspection	16 ☐ Daily Inspection	17 ☐ Daily Inspection	18 ☐ Daily Inspection
19 ☐ Daily Inspection	20 ☐ Daily Inspection	21 ☐ Daily Inspection	22 ☐ Daily Inspection	23 ☐ Daily Inspection	24 ☐ Daily Inspection	25 ☐ Daily Inspection
26 ☐ Daily Inspection	27 ☐ Daily Inspection	28 ☐ Daily Inspection	29 ☐ Daily Inspection	30 ☐ Daily Inspection	31 ☐ Monthly Inspection	

Vapor Recovery Glossary

A

Adaptor or Coupler - A fitting on each riser pipe inside a spill container. Provides a leak-proof seal between the riser pipe and the Phase I delivery elbow.

Air to Liquid Ratio, A/L - The volume of air ingested compared to the volume of gasoline dispensed with a vacuum assist nozzle.

Approval Letter - An intermediary certification of vapor recovery components that allows certification without amending E.O.s.

ARB Certified Vapor Recovery System - A vapor recovery system that has been certified by the CA ARB pursuant to HSC, 41954.

Assist System - A vapor recovery system, which employs a pump, blower, or other vacuum inducing devices, to collect and/or process vapors.

B

Bag Test - A diagnostic tool used to check for an air leak in the vapor recovery system.

Balance System - A vapor recovery system which uses direct displacement to collect and/or process vapors at a subject facility

Bellows - Tubular rubber boot that surrounds the spout of a nozzle to provide a return path for the recovered vapor from the vehicle fill pipe.

Blockage Test - Test designed to detect low spots in the vapor return path where liquid could accumulate and cause obstructions.

Breakaway - A coupling, mounted on the dispenser hose, designed to separate and close the product line if a vehicle drives off with the nozzle.

Bulk Delivery (or Drop) - The transfer of gasoline from a cargo tank into the dispensing facility's stationary storage tank.

Bulk Plant - An intermediate gasoline distribution facility where delivery to and from storage tanks is by cargo tank.

C

Cargo Tank - A container, including associated pipes and fittings, which is used for the transport of gasoline.

Check Valve - Prevents the release of vapor through the nozzle between fueling episodes. The valve is opened during vehicle refueling.

Clean Air Act - A federal law passed in 1970 and amended in 1977 and 1990 which forms the basis for the national air pollution control effort.

Clean Air Separator, CAS - a passive gasoline storage tank ullage pressure management system, with no electrical requirements.

Coaxial Hose - A hose-inside-a-hose arrangement whereby the smaller diameter hose delivers product and the larger diameter hose recovers vapor during vehicle refueling. Coaxial hoses are used in balance systems and some assist systems, where the liquid flows on the outside.

Coaxial System - A phase I system at a gasoline facility employing a single connection for product delivery and vapor recovery between the cargo tank and facility storage tank. The more common two point system has separate connections for gasoline delivery and vapor recovery.

D

Delivery Elbow - A quick connect/disconnect type coupler that joins a hose from the cargo tank to the facility's storage tank riser pipe.

Drop Tube - A fill pipe through which product is delivered into a storage tank from a cargo tank. The discharge opening must be entirely submerged when the liquid level in the tank is six inches above the bottom of the tank.

Dry Break (Poppet) - A spring-loaded valve that prevents vapor from escaping through the riser pipe opening of a storage tank. During product delivery, a mechanism in the vapor delivery elbow opens this valve to allow vapors to enter the cargo tank.

Dual System (Two Point System) - A system in which the storage tank is fitted with a product drop tube and separate vapor recovery riser pipe.

Dynamic Back Pressure Test - A test that simulates the pressure required to force vapor back to the storage tank during refueling.

E

Emission Factor - A performance standard expressed as pounds of hydrocarbons per 1,000 gallons of gasoline dispensed.

Enhanced Vapor Recovery, EVR – Requirements that establish new vapor recovery guidelines to be phased in over a four year period. EVR Phase I Vapor Recovery will improve from 95 to 98 percent vapor recovery .efficiency.

F

Face cone - A cone-shaped piece attached to the bellows of an assist nozzle to prevent a tight seal so that a dangerous vacuum in the vehicle tank will be avoided during refueling.

Faceplate - A soft donut-type piece attached to the bellows of a balance nozzle so that a tight seal with the vehicle fill pipe can be achieved while fuel is being dispensed. This allows for effective collection of vapors during refueling.

G **Gasoline** - Any petroleum distillate having a Reid vapor pressure of four pounds or California Air Resources Board May 25, 2006 D-200, Page 3 greater and meeting the requirements of title 13, California Code of Regulations, division 3, chapter 5, article 1, beginning with section 2250.

H **Hold Open Latch** - A certified device which is an integral part of the dispensing nozzle and is manufactured specifically for the purpose of dispensing gasoline without requiring the consumer's physical contact with the nozzle during refueling operations.

I **Insertion Interlock** - Any certified mechanism which is an integral part of a bellows-equipped dispensing nozzle which prohibits the dispensing of fuel unless the bellows has been compressed.

In-Station Diagnostics, ISD - Equipment that provides continuous real-time monitoring of critical emission-related vapor recovery system parameters and components, and alerts the station operator when a failure mode is detected so that corrective action is taken.

Inverted Coaxial Hose - A hose inside a hose arrangement whereby a larger product dispensing hose surrounds a smaller diameter vapor recovery hose.

L **Liquid Removal Device** - A device designed specifically to remove liquid from the vapor return portion of a vapor hose.

M **Mini-boot (vapor guard)** - A device used on vapor recovery nozzles to enhance collection efficiency without requiring a tight seal at the vehicle fill pipe. A tubular device surrounding the base of the spout of assist nozzles to enhance vapor recovery.

Multi-Product Dispenser, MPD - A dispenser of multiple products with one or more hoses per dispenser side.

N **Notice of Violation, NOV** - Document issued by an air district to a company for violating regulations.

O **Onboard Refueling Vapor Recovery, ORVR** - Vehicle based system required by title 13, California Code of Regulations, section 1978, or Part 86, Code of Federal Regulations. A device installed on many new vehicles that collects and processes gasoline vapor during refueling.

Operational Test - Testing conducted for the purpose of certification of a vapor recovery system or component where the vapor recovery equipment is installed in an operating facility. The term “operational test” is intended to imply certification tests conducted on a facility operating under normal conditions. This definition excludes vapor recovery equipment defect and bench tests conducted as part of a system certification. Challenge mode testing may be conducted during an operational test if the Executive Officer determines that such testing will not impact the test.

Overfill Prevention Device - A device designed to stop the delivery of product to a storage tank to prevent the over-filling of the tank and potential spillage.

Ozone - A strong smelling, reactive toxic gas created in the atmosphere from the chemical reactions among hydrocarbons and nitrogen oxides in the presence of sunlight. Ozone, a major component of smog, is a criteria pollutant.

P **Permit to Operate, PTO** - Written authorization, issued by an APCD/AQMD that allows an emissions generating facility to operate as long as it meets the conditions of the permit.

Pressure Decay Test - A low pressure testing method used to verify vapor recovery system installation leak rate.

Pressure/Vacuum Valve, P/V Valve - A dual purpose valve that automatically prevents excessive positive or negative pressure in the tank or pipe to which it is connected. At a specified pressure, it allows the release of vapors into the atmosphere from the tank or pipe. At a specified vacuum, it allows intake of atmospheric air into the tank or pipe.

Processor - A vapor processor, either destructive or non-destructive, that maintains the pressure of the vapor in the gasoline storage tank within specified limits.

R **Reformulated Gasoline, RFG** - Fuel in which the composition has been altered in order to reduce VOCs and toxics emissions.

Riser - A 3" or 4" diameter pipe mounted to the top of the underground storage tank (UST). The spill container mounts to the top of the riser.

Refueling - The act of filling a vehicle gas tank at a service station.

S **Spillage** - Liquid which enters the environment from a dispensing facility, except for liquid which leaves such dispensing facility in a vehicle tank or cargo tank. The following definitions apply for the determination of spillage as defined above: pre-dispensing spillage - spillage which occurs between the time when a dispensing nozzle is removed from a dispenser and the time when the dispensing nozzle is inserted into the tank receiving the dispensed liquid; dispensing spillage: spillage which occurs between the time when the dispensing nozzle is inserted into the tank receiving the dispensed liquid and the time when the dispensing nozzle is withdrawn from the tank receiving the dispensed liquid.

Spill Container - A containment manhole, usually equipped with a drain valve, installed to and around the storage tank product riser pipe. Also known as a spill box or spill bucket. The container around the vapor recovery riser pipe is also known as a spill container.

Squeeze Bulb Test - This inspection procedure provides a method to determine if bootless Phase II vacuum assist vapor recovery nozzles or remote vapor check valves allow air ingestion into the vapor recovery system.

Submerged Fill Pipe - A fill pipe in which the discharge opening is entirely submerged when the liquid level is 6 inches above the tank bottom.

T **Tank Probe** - A device used to ensure that submerged fill pipes are properly installed.

Terminal - A primary distribution facility for loading cargo tanks that deliver gasoline to bulk plants and service stations.

Toxic Air Contaminant, TAC - An air pollutant, identified in regulation by the California Air Resources Board, which may cause or contribute to an increase in deaths or serious illness when present above a pre-determined threshold level. Gasoline contains some TACs, e.g., benzene.

Top-off - the attempt to dispense gasoline to a motor vehicle or utility equipment fuel tank after the dispensing nozzle primary shutoff mechanism has engaged. The filling of a class of vehicle tanks which, because of the configuration of the fill pipe, cause premature activation of the primary shutoff, shall not be considered topping off.

Two Hundred Car Test - Refers to the minimum number of vehicles required in order to determine the overall collection efficiency of a vapor recovery system.

Two Point System (Dual System) - A Phase I system at a GDF that provides separate connections for product delivery and vapor recovery between a cargo tank and storage tank.

U **Ullage** - The empty volume of any container. For example, the ullage of a tank designed primarily for containing liquid is the volume of the tank minus the volume of the liquid.

Underground Storage Tank, UST - any one or combination of tanks, including pipes connected thereto, which is used for the storage of gasoline, which is substantially or totally beneath the surface of the ground and does not have an emergency vent.

Unihose dispenser - A multi-product dispenser that has only one hose and nozzle per dispenser side.

V **Vapor Check Valve** - Prevents the release of vapor through the nozzle between fueling episodes. The valve is opened during vehicle refueling.

Variance - Permission granted for a limited time (under stated conditions) for a company to operate outside the limits prescribed in a regulation.

Vent - Any plumbing that conveys an air/vapor mixture from a vapor recovery system to the atmosphere.

Venturi - A short tube with a constricted, throat-like passage that increases the velocity and lowers the pressure of the fluid passing through, creating a vacuum.

Volatile Organic Compounds, VOC - Carbon compounds that evaporate into the atmosphere and contribute to smog formation.

Volatility - A measure of the ease with which a compound changes from liquid to vapor at atmospheric pressure and temperature.

Vapor Recovery Equipment Defects List, VRED – ARB list of equipment defects that substantially impair the effectiveness of the system, for each certified system. List is reviewed and updated every 3 years, to reflect changes in technology.

W **Whip hose** - A short coaxial hose between the outlet casting on the dispenser and the breakaway.

Need More Help?

For additional Information on Phase I or Phase II operations in your area, please contact your local air district:

http://www.arb.ca.gov/vapor/distcontjul08.pdf

the Air Resources Board (ARB) Vapor Recovery Program:

http://www.arb.ca.gov/vapor/vapor.htm
http://www.evrhome.org

the ARB Web Site:

http://www.arb.ca.gov/homepage.htm

The ARB Compliance Assistance Program would like to recognize the State of Virginia, Office of Small Business Assistance for the contribution of the overall format of this publication.

California Environmental Protection Agency
Air Resources Board, Enforcement Division
Compliance Assistance Program
PO Box 2815, Sacramento, CA 95812
www.arb.ca.gov/cap/cap.htm


evron


ALARM
WARNING
POWER
TS-EMS
Electronic Monitoring System